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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

AK

Office Action Summary

Application No.

10/765,534

Applicant(s)

ELLIOTT, GEOFFREY

Examiner

Rashedul Hassan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. 20071112.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

The Examiner acknowledges and appreciates Applicant's Amendments and Arguments filed on 08/13/2007, and Supplemental Amendments filed on 09/24/2007, both of which have been fully considered.

Substance of Interview

The Examiner agreed upon request from the Applicant to schedule an interview and discuss on the merits of the application and on the preliminary amendment. Accordingly on May 23, 2007, the Examiner spoke with the Applicant, and expressed his opinion that the submitted preliminary amendment does not distinguish the claimed invention from the cited references. Although the Applicant and the Examiner were unable to reach an agreement, the Examiner agreed to thoroughly review and reconsider Applicant's amendments to the claims once they are filed on the record. The Examiner also informed the Applicant during the interview on 05/23/2007 that claims 10-16 should have been rejected also under 35 U.S.C. § 101 for being directed to non-statutory subject matter based on the disclosure that incorporates transmission media within the scope of the claimed computer readable medium, and apologized for the oversight.

Response to the Formal Request for an Interview

The Examiner appreciates and understands Applicant's willingness to resolve any outstanding issues over the phone. Accordingly the Examiner called the Applicant on 10/02/2007 to request further information regarding the date when the reference "Introduction to Windows Peer-to-Peer Networking (Microsoft Publication , Jan 2003) , hereinafter IWP2P, was published to the public by the Assignee of the instant application. The Examiner appreciates the Applicant's prompt response to the requested information. Upon a thorough review of the amendments, remarks, substance of the interview and evidences submitted by the Applicant along with the affidavits, the Examiner is of the opinion that a written response in part of the Examiner would best serve the common goal of an expedited prosecution of this application.

37 CRF 1.131 Declaration regarding Prior Invention

The Affidavit filed on 09/24/2007 under 37 C.F.R. 1.131 has been considered but is ineffective to overcome the 35 U.S.C. 103(a) rejection over Goodisman (US 6,330,006 B1) in view of IWP2P.

Applicant is attempting to establish priority of invention by showing conception and actual reduction to practice of the invention prior to the effective date of the IWP2P reference.

The Examiner notes that the actual effective date of IWP2P reference is July 23, 2003 based upon the 37 CFR 1.132 declaration filed by the Applicant on behalf of Microsoft Corporation declaring that the reference was not publicly available until after January 27, 2003 and the submitted evidence showing the publication date to be July 23, 2003.

Applicant has submitted a declaration along with redacted portions of a "Patent Pre-disclosure Document" as the sole exhibit allegedly indicating the "fact" that the inventor conceived and actually reduced the subject matter of the instant application to practice before the effective date of the reference IWP2P.

As will be explained in detail below, the affidavit and supporting exhibit are not sufficient to prove either conception or reduction to practice.

GENERAL CONSIDERATIONS

The affidavit or declaration and exhibits must clearly explain which facts or data applicant is relying on to show completion of his or her invention prior to the particular date. Vague and general statements in broad terms about what the exhibits describe along with a general assertion that the exhibits describe a reduction to practice "amounts essentially to mere pleading, unsupported by proof or a showing of facts" and, thus, does not satisfy the

requirements of 37 CFR 1.131(b). In re Borkowski, 505 F.2d 713, 184 USPQ 29 (CCPA 1974). **Applicant must give a clear explanation of the exhibits pointing out exactly what facts are established and relied on by applicant.** 505 F.2d at 718-19, 184 USPQ at 33. See also In re Harry, 333 F.2d 920, 142 USPQ 164 (CCPA 1964) (Affidavit "asserts that facts exist but does not tell what they are or when they occurred."). (MPEP 715.07)

Applicant's Declaration does not provide a "CLEAR" explanation

Following is a direct quotation from Applicant's declaration showing the sole explanation of the exhibits provided by the Applicant:

"I conceived and reduced the invention to practice in the United States prior to the publication date of "Introduction to Windows Peer-to-Peer Networking."

Attached to this declaration is evidence (redacted portions of a Patent Pre-disclosure Document") documenting that the invention was conceived February 26, 2002, and reduced to practice August 25, 2002, which predates the January 2003 publication data reflected on the cited publication "Introduction to Windows Peer-to-Peer Networking."

The declaration does not even contain any vague and general statements in broad terms about what the exhibits describe, let alone attempting to provide any explanation whatsoever pointing out exactly what facts are established and relied on by the applicant. Therefore, the general assertion that the exhibits describe a reduction to practice "amounts essentially to mere pleading, unsupported by proof or a showing of facts" and, thus, does not satisfy the requirements of 37 CFR 1.131(b). Thus applicant

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has not met his burden of clearly showing how the submitted evidence supports either conception or actual reduction to practice of the invention.

CONCEPTION

Conception has been defined as “the **complete** performance of the mental part of the inventive act” and it is “the formation in the mind of the inventor of a **definite** and permanent idea of the **complete** and **operative** invention as it is thereafter to be applied in practice...” *Townsend v. Smith*, 36 F.2d 292, 295, 4 USPQ 269, 271 (CCPA 1930). Taking into consideration that when reviewing a 37 CFR 1.131 affidavit or declaration, the examiner must consider all of the evidence presented in its entirety, including the affidavits or declarations and all accompanying exhibits, records and “notes”, and additionally taking into consideration that an accompanying exhibit need not support all claimed limitations, provided that any missing limitation is supported by the declaration itself, the Examiner concludes that the declaration and the accompanying exhibit do not provide enough evidence to support all the claimed limitations prior to the reference date, therefore does not support conception of the claimed invention. For example, there is no explanation of the exhibit or positive statement on the declaration to support the limitation “wherein extracting the data from the received record comprises employing a model of object persistence to create an object from the data of the received record” of claim 3. Applicant did not give a clear explanation pointing out **exactly** what facts are established and relied upon from the exhibit with respect to this particular limitation. The aforementioned limitation in claim 3

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merely provides one example of insufficient evidence supporting conception of the claimed invention. It is to be understood that there are other claimed limitations that are not sufficiently supported by the evidence provided by the declaration and the accompanying exhibit.

REDUCTION TO PRACTICE

In general, proof of actual reduction to practice requires a showing that the apparatus actually existed and worked for its intended purpose. See MPEP 715.07.

For an actual reduction to practice, the invention must have been sufficiently tested to demonstrate that it will work for its intended purpose, but it need not be in a commercially satisfactory stage of development. (See MPEP 2138.05)

In order to establish prior invention, the evidence must show that the ***claimed*** invention is what was reduced to practice prior to the date of the reference sought to be antedated.

In general, the affidavit does not even attempt to explain as to how the Exhibits support the RTP of the ***claimed invention***. The aforementioned limitation in claim 3 merely provides one example of insufficient evidence supporting conception of the claimed invention. Thus applicant has failed to provide a CLEAR explanation of how the exhibits support the reduction to practice of the claimed invention, in the sense that it is

not clear whether the Exhibits even support the conception of the invention at issue. Note, that this is merely one example of the lack of clear explanation. The burden is on applicant to provide a proper declaration and supporting exhibits in order to establish prior invention. Furthermore, Applicant failed to provide any evidence whatsoever to show that the apparatus actually existed and worked for its intended purpose. In order to show reduction to practice the device must have been sufficiently tested to prove it actually worked for its intended purpose. Applicant's submission is devoid of any evidence for the Examiner to consider for being able to draw the conclusion that such testing took place. There is not enough information for the examiner to determine whether the test conditions represented actual working conditions or were sufficiently close to actual conditions so that one would be confident that it would work in appropriate circumstances. Since no testing information is presented or even mentioned in the declaration the Examiner cannot determine whether any test was attempted at all.

Thus applicant has not met his/her burden of **clearly** showing how the submitted evidence supports conception and actual reduction to practice of the invention prior to the effective date of the reference sought to be overcome. Accordingly the Examiner retains the IWP2P reference for the rejections concerned.

Response to the Arguments on Substantive Matters

Examiner's response to Applicant's remarks/arguments on substantive matters of the instant application follows.

Claim Rejections under § 101

Claims 17-19 were rejected in the previous Office Action under 35 U.S.C. § 101 for being directed to non-statutory subject matter, and the Examiner also informed the Applicant during the interview on 05/23/2007 that claims 10-16 should have been rejected also under 35 U.S.C. § 101 for being directed to non-statutory subject matter based on the disclosure that incorporates transmission media within the scope of the claimed computer readable medium.

Applicant has submitted that all claims comply with the patentability requirements of § 101.

Claims 17-19 are directed to a “replicated data store”. Applicant has provided antecedent basis for the claim terminology “replicated data store” (*Specification says, “Thus the invention is directed in embodiments to an N to N replicated data store and presentation”, see [0006]*). However, Applicant has not provided an explicit and deliberate (*i.e., limiting*) definition of the terminology. The specification does not provide any further guidance beyond providing the antecedent basis, as mentioned above, as to what constitutes the claimed “replicated data store”. In the Remarks filed on 8/13/2007, Applicant mentions, “*Claim 17 recites a ‘replicated data store’ that ‘stores’ objects from one computer onto another computer*” (*see [0026] in page 18*). Therefore, based on the claim language and Applicant’s remark, a “replicated data store” can reasonably be

interpreted to be directed to “functional descriptive material” intended to be used for propagating and storing copies of objects from one computer onto another computer. The claim recites that the “functional descriptive material” comprises a peer graph object on the first computer, a peer graph object on each of the second computers, and a data source object on each of the second computers. Thus the claim recites functional descriptive material in combination with appropriate computer-readable medium to be considered statutory under the meaning of 101. Therefore, previous rejections for claims 17-19 under 35 U.S.C. § 101 for being directed to non-statutory subject matter have been hereby withdrawn.

Claims 10-16 are directed to a computer-readable medium. Applicant has provided antecedent basis for the claim terminology “computer-readable medium”. However, Applicant has not provided an explicit and deliberate (i.e., limiting) definition of the terminology. But, Applicant has provided intrinsic evidence of embodiments intended to be covered within the meaning. One of the covered embodiments include “transmission media” (see p9:6-8). Transmission media in the context of the disclosure can reasonably be interpreted to cover signals, carrier waves, electrical cable or optical fibers, which are currently considered by the Office to be non-statutory within the meaning of 101. Hence the claims have been objected to in this Office Action for encompassing within their scope non-statutory subject matter under the meaning of 35 U.S.C. 101.

Claim Rejections under § 103

In the previous Office Action rejections to the claims under 35 U.S.C. § 103(a) were as follows:

Claims 1, 2, 8-11, 17-18, 20 and 21 were rejected over Goodisman (US 6,330,006 B1) herein after Goodisman, in view of Introduction to Windows Peer-to-Peer Networking (Microsoft Publication, Jan 2003) hereinafter IWP2P.

Claims 3 and 12 were rejected over Goodisman, in view of IWP2P, and further in view of Reilly.

Claim 19 was rejected over Goodisman, in view of IWP2P, and further in view of Eriksson.

Applicant argued that the Examiner has not shown or made a prima facie case showing that the rejected claims are obvious. The Examiner disagrees with Applicant for the reasons discussed in detail below.

Overview of the Application

As per the abstract of the application, and according to the overview presented by the Applicant, the application describes a technology for synchronizing user interfaces on peer machines in a peer-to-peer network. In particular, data binding is used to ensure that data sources and corresponding UI objects remain mutually synchronized. Further, in an embodiment of the invention, object persistence is utilized to transform changed data source objects to a data stream for propagation via a peer

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graph record structure. Furthermore, in an embodiment of the invention, a standard interface is then used to create and load the propagated object on a peer machine. Thus the invention is directed in embodiments to an N to N replicated data store and presentation (*see p14 [0017] in Applicant's Remarks filed 08/13/2007*).

Detailed Analysis of the Application and Rationale/Response for the Rejections

A detailed analysis of the application together with a comparison with the prior art of record is presented below in order to help understand the rationale behind the rejections and to respond to arguments presented by the Applicant.

The independent claims are basically directed to method, apparatus, computer-readable medium having embodied thereon executable instructions, replicated data store, and N to N replicated data store for synchronizing user interfaces on a plurality of machines over a peer-to-peer network. According to the disclosure, and correspondingly dependent claims 6-7, the interfaces on a plurality of machines are provided by group interaction applications used by users engaged in a group interaction session over the network, wherein each machine manifests a media item to the respective user.

Therefore, first the Examiner considered:

Is the concept of using a group interaction application providing user interfaces on plurality of machines over a peer-to-peer network a novelty of the instant invention?

According to Applicant's own admission, peer-to-peer network was a prevalent form of network at the time of the invention (e.g., "*There are a number of different network types, but one prevalent form of network is the peer-to-peer network*", see [0003]), and use of group interaction applications providing user interfaces on plurality of machines over a peer-to-peer network was also well-known at the time of the invention (e.g., "*an increasingly popular use of peer-to-peer networks is for online group interaction*", see [0004]). Therefore, the Examiner concludes that the concept of using a group interaction application providing user interfaces on a plurality of machines over a peer-to-peer network is not a novel invention.

Next the Examiner considered:

Is the concept of "synchronizing user interfaces on peer machines in a peer-to-peer network" a novelty of the instant invention?

Accordingly, the Examiner considered the following disclosure in the Background section of the Specification by the Applicant that says regarding existing group interaction applications:

[0005] During a shared activity, the group interaction application ensures that each online member sees the same representation of the shared activity as additions, deletions, and modifications are made. One mechanism for synchronizing the presentation of each member is a peer-to-peer network as described above, although other connection mechanisms,

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including those with centralized switching or storage, are also usable. However, existing synchronization techniques are complicated to program to and increase the overhead required for networking. There is a need for an improved and simplified mechanism for synchronizing user interface elements over a peer-to-peer network.

From the portions of the instant disclosure underlined above, it appears to the Examiner as an admission by the Applicant that the concept of synchronizing user interfaces on peer machines in a peer-to-peer network was existing knowledge in the art at the time of the invention. Furthermore, the instant invention is an improvement over the existing synchronization techniques of user interface elements of a group interaction application using peer-to-peer network. Therefore, the concept of “synchronizing user interfaces on peer machines in a peer-to-peer network” is not the novelty under consideration, but it is how the existing synchronization techniques have been improved upon is the novelty under consideration.

So, the next logical step was to determine:

how the existing synchronization techniques have been improved upon?

Following is a description of what the Examiner has understood from the given disclosure. The Applicant is cordially invited to clarify referring to relevant sections of the disclosure any issue, which the Examiner might have misunderstood or unintentionally overlooked in the next response.

The Examiner considers Fig. 4 as the most relevant figure that illustrates the instant invention claimed in the application. Fig. 4 is a schematic diagram illustrating two peer machines in a peer-to-peer network and illustrates associated components within each machine according to an embodiment of the invention (*i.e., the claims are based on this embodiment*). Fig. 4 and part of the corresponding portions of the disclosure (shown here in italic font) are given below for the convenience of the reader.

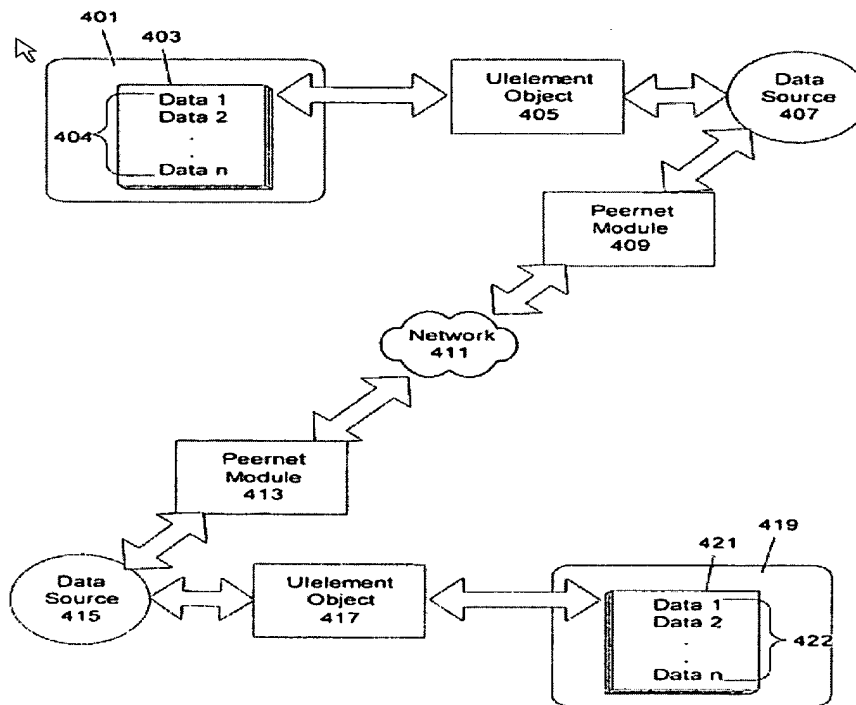


FIGURE 4

[0033] The principles according to an embodiment of the invention will be described by reference to the schematic diagram of Figure 4. Figure 4 shows a simplified user interface 401, containing a user interface element 403. For the sake of example, the user interface element 403 is shown as containing (displaying) data 404 including data elements 1 through n.

[0034] *The user interface element 403 is generated based on an Ulelement object 405...the Ulelement object 405 may represent a song playlist and may incorporate other objects that represent individual songs. The object Ulelement 405 is linked to a data source object 407, such as an actual copy of a playlist, document, photograph, song, etc. The data source 407 is in turn linked to a peernet module 409, which is linked over a network 411 to a counterpart module 413 associated with another peer machine.*

[0035] *The peer machine has similar components 413, 415, 417, 419, 421, and 422 corresponding to components 401, 403, 404, 405, 407, and 409 respectively. In operation each peemet module 409, 413 communicates with the other by sending and receiving records over the network 411. Each peemet module 409, 413 is also responsible for exchanging data with the respective Ulelement object 405, 417.*

[0036] Peemet can be used to ensure that the data sources 407, 415 are synchronized, i.e., that a change to a data source on any peer machine is reflected to all other peer machines. However, this does not ensure that the respective user interfaces such as interfaces 401, 419 will be automatically synchronized. Accordingly, a data binding technique is used in embodiments of the invention to maintain synchronous user interfaces over the peer-to-peer network.

From the above mentioned portions of the disclosure, specifically according to [0036], it appears that the invention basically has two major aspects, one is the “peer-to-peer” aspect and the other is the “data binding” aspect (*i.e., all limitations in the claims fall within the scope of one of these two aspects*). In one embodiment, “peernet” is used for the “peer-to-peer” aspect, i.e., for synchronizing “data sources” among multiple user

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nodes in the peer-to-peer network, while the “data binding” aspect is performed on each individual nodes to synchronize the “data sources” with the corresponding “Ulelement objects 405” which are control objects that render the “Interface elements 403” on the display.

Let us first explore the “peer-to-peer” aspect of the invention. So, what is this “peernet” technology that has been used? The instant disclosure elsewhere discloses:

[0030] In an embodiment of the invention, data binding is used in conjunction with a peer graph associated with a suitable peer-to-peer technology such as “Windows Peer-to-Peer Networking” technology, herein referred to generally as “peernet,” to synchronize user interface elements of group members connected over a peer-to-peer network. It will be appreciated by those of skill in the art that the Peer-to-Peer Graphing and Peer-to-Peer Grouping Infrastructures are usable to implement the peer-to-peer aspects herein.

Therefore, “peernet” is a suitable peer-to-peer technology such as “Windows Peer-to-Peer Networking” technology. IWP2P reference shows that “Windows Peer-to-Peer Networking”, i.e., peernet technology was existing art at the time of the invention. Also, Applicant’s own remark, “*It will be appreciated by those of skill in the art that the Peer-to-Peer Graphing and Peer-to-Peer Grouping Infrastructures are usable to implement the peer-to-peer aspects herein*” seems to be an admission by the Applicant that the peernet technology itself was existing knowledge in the art at the time of the invention. So, this existing technology, specifically a “peer graph” is used “*to ensure that the data sources 407, 415 are synchronized, i.e., that a change to a data source on any peer machine is reflected*

to all other peer machines" (see [0036], also cited hereinabove). The important considerations here are:

(a) Is this "use" of the existing technology, i.e., the use of peernet technology to ensure that the "data sources" are synchronized among peer machines is a new concept to be considered as the Applicant's invention?

(b) Are there any modifications or improvements made by the Applicant beyond the existing "peernet" technology for this supposedly new use?

(c) Whether or not improvements are made beyond the existing "peernet" technology, if it is a new use, then would this new "use" be obvious to those skilled in the art at the time of the invention?

Regarding consideration (a), first it needs to be determined what constitutes a "data source". According to claim 1, the "*data source object comprising data usable by the display object for constructing the user interface object*". The disclosure provides examples of data source objects. Referring to Fig. 4 it says, "*The object Ulelement 405 is linked to a data source object 407, such as an actual copy of a playlist, document, photograph, song, etc.*" (see [0034] which has been cited hereinabove). Additionally, in the Remarks filed on 8/13/2007, the Applicant further emphasizes that a "data source object" is "data usable by display object to construct the user interface element" (see [0024] in page 16). Thus, the "data source object" is the "shared data", e.g., "media item" such as a document, photograph or song, which is displayed using the user interface element.

It appears to the Examiner that such synchronization of "data source objects", in other words "objects" comprising "shared data", using a "peer graph" was existing knowledge in the art at the time of the invention. IWP2P reference introduces various aspects and various scenarios for use of the "Windows Peer-to-Peer Networking" or "peernet" technology, which (*i.e., the technology*) the Applicant admits to be prior art. Among other things, the reference teaches "Peer-to-Peer Graphing" and "Peer-to-Peer Grouping" infrastructures of the peernet technology (*see Fig. 1 in page 6, Graphing further discussed in page 13, Grouping further discussed in page 17 of the reference*). Following are excerpts of relevant portions in the reference mentioned here for the convenience of the reader:

Graphing:

"The Graphing component is responsible for maintaining a set of connected nodes known as a graph and providing flooding and replication of data across the graph. The Graphing component uses the Flood & Synchronization, Store, and Graph Maintenance subcomponents" (page 6).

"A peer graph, or graph, is a set of nodes that are multiply connected to form a coupled network of nodes for the purposes of propagating data in the form of records or point-to-point data streams...A peer graph is built and based on flooding. Flooding is the process of propagating a record to all users connected to a graph. A flooding protocol is used to do the following:

- Propagate the addition of new records to all the nodes of the graph.*
- Propagate the updates of changed records to all nodes of the graph.*

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- Propagate the deletion of deleted records to all the nodes of the graph.

In addition, a synchronization process ensures that peer have the same set of records, which can result in the flooding of more records" (page 13).

Grouping:

"Information in the form of records is securely flooded throughout a group. A record contains the following:

- The publishing member identity
- Data to prove record validity
- A validity time
- A payload that contains the record information" (page 17)

Replicated Store:

" The replicated store is the set of records associated with a graph that are securely published and synchronized between all members of the group. The replicated store represents the view of the group data, which should be the same for all group members. (page 21).

Referring to the above excerpts from the IWP2P reference, clearly the reference teaches synchronization of "records" among a plurality of nodes of a group in a peer-to-peer network using "peer graph" (see the highlighted and underlined sections in the excerpt). Is their any distinction between a "record" of the reference and the "data

source” claimed? The Examiner understands that the distinction is merely in the form and not in the content. The instant specification itself describes the distinction as shown below:

[0032] One suitable technology for sharing data within a peer-to-peer network is technology of peernet. Peernet uses data structures called records to transfer information throughout the peer-to-peer network. A record is typically data with accompanying metadata such as create time, expire time, type, size, etc. Thus, using peernet, if a song is added to a local user interface by a user, then in order for that change to propagate, the change must be recognized and the song, and data related to the song, must be transformed into pure data that can be sent via one or more records.

So, a “record” is pure “data”, wherein a “data source” is an “object” (i.e., in object-oriented-programming terminology) comprising the “data”. Like the instant specification, the IWP2P reference also mentions “*propagating data in the form of records*” (see the excerpt “Graphing” hereinabove). The IWP2P reference teaches that a record contains “data” that is propagated to all the nodes connected to a graph, and the set of records associated with a graph is known as the “replicated store” that represents the view of the group data, which should be same for all group members. So a “record” contains at least “shared data” since it is shared and synchronized among all group members. The Examiner considered what this “shared data” constitutes? In other words, does this “shared data” be used to construct a “user interface element”, in other words, displayed in a “user interface element”? IWP2P suggests various usage scenarios of the peernet technology. Among these scenarios Real-time communications (RTC), Collaboration, and Content distribution are of particular interest to the Examiner since they involve

propagation and distribution of “shared data” among a plurality of nodes in the peer-to-peer network, and implies use of “group interaction applications”. Those skilled in the art would readily realize that by “propagating data in the form of records”, the IWP2P reference is implying such “shared data” to be the “data” that is propagated, such as voice and video information, files, content of shared workspace and contents of shared experiences etc. mentioned in the reference. Those skilled in the art would also readily realize that such “shared data” exists in the form of “objects” in Object-oriented-programming environment (see pages 1-3 for details) and displayed on “user interface elements” of group interaction applications. In fact, regarding “replicated store” the reference teaches:

“Applications can register new record types and begin publishing them using the security of the group. When an application publishes a new record, the security mechanisms for the group are applied to the record and it is published securely. New records published by applications are automatically flooded to all group members. Applications can also register interest in receiving all records of a specific record type. When the record is received, the application is notified and the record data is passed to the application. For example, a group chat application can register interest in receiving all chat records types so that it can monitor the chat activity within the group and notify the user appropriately” (page 21).

Above excerpt (e.g., “when an application publishes a new record”) shows that the “data” in a record comes from an “application”, such as a “group chat application”, which is then propagated to all nodes using the graph. Also the excerpt above mentions, “For

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example, a group chat application can register interest in receiving all chat records types so that it can monitor the chat activity within the group and notify the user appropriately". That is the "record" contains "data" related to a "chat application", and upon arrival of such data the application is notified and record data is passed to the application, wherein the application "notifies the user appropriately". It would be apparent to those skilled in the art that the "notification" to the user requires "displaying" the "data" of the record in a "user interface element" of the "group chat application". In other words, the "data" in the "records" is used for constructing a user interface element. Therefore the Examiner concludes that synchronization of "data source objects", using a "peer graph" was existing knowledge in the art at the time of the invention.

Regarding consideration (b) (e.g., are there any modifications or improvements made by the Applicant beyond the existing "peernet" technology for this supposedly new "use"?), the Examiner concludes that there is no evidence showing any such modifications or improvements in the disclosure. According to the instant disclosure, in order for propagating changes to a "data source" object, the "data source" object **must be** transformed into pure data that can be sent via one or more records using peer graph. It has already been pointed out above that according to IWP2P changes to "data source objects" are propagated to all members of a group via one or more records using peer graph. Since, based on Applicant's disclosure, data source object **must be** transformed into pure data in order for sending it via records using peer graph, it follows that such

transformation is necessarily present in IWP2P in order for propagating “data source objects” using peer graph as mentioned in the reference.

Regarding consideration (c) (e.g., whether or not improvements are made beyond the existing “peernet” technology, if it is a new use, then would this new “use” be obvious to those skilled in the art at the time of the invention?), the Examiner concludes that the “use” is taught by the reference. Nevertheless, It appears that Applicant admits that those skilled in the art would have known or readily realize that the existing “*Peer-to-Peer Graphing*” and “*Peer-to-Peer Grouping*” infrastructures can be used to implement the peer-to-peer aspects of the invention (e.g., the refer to the specification as it says, “*It will be appreciated by those of skill in the art that the Peer-to-Peer Graphing and Peer-to-Peer Grouping Infrastructures are usable to implement the peer-to-peer aspects herein*”. [0030]).

Thus, it appears to the Examiner that the Applicant has not made any improvement upon the existing “Windows Peer-to-Peer Networking” or “peernet” technology, but merely used it to ensure that the “data source objects” are synchronized among multiple peer machines. However, such an use also does not appear to be a new invention, at least not an invention that would not have been readily apparent or obvious to those skilled in the art according to Applicant’s own admission in the disclosure.

Therefore, if synchronizing “data sources” among multiple user nodes in the peer-to-peer network using “peernet” technology is not a new invention, then question remains as to what the Applicant has really invented according to the claims interpreted in light of the disclosure? Is it the “data binding” aspect of the invention?

So, what is this data binding as claimed?

The instant disclosure discloses:

[0030] Prior to discussing the invention in greater detail, the concept of data binding will be briefly discussed for the convenience of the reader. Data binding is technique for tying objects or other entities to data. For example, a user may fill in a form on their computer in conjunction with a server located over a network connection. The form may have boxes or fields for various types of data, such as name, address, and so on. The data for the relevant fields can reside on the server, with each data field UI object or entity on the client being bound or tied to the appropriate data. Thus, for example, when the form loads at the client, the data for filling the various fields is automatically retrieved in its most updated form from the server because of the data binding.

The disclosure cited above describes the concept of “data binding”. However, it is not clear from the disclosure itself whether this concept is part of the novelty of Applicant’s invention, or is it existing knowledge in the art? A search for prior art references reveals that the concept of “data binding” is, in fact, existing knowledge in the art. Goodisman teaches synchronizing interface objects of an application’s graphical user interface (GUI) with underlying data on a computing device. A design tool is used in embodiments of the invention for developing applications to specify an interface object’s

binding properties. Data binding properties can define an association between an interface object and underlying data for synchronization purposes. The design tool used in embodiments of the invention generates program code that expresses the binding properties defined using the design tool. As program code, the bindings are exposed for review and modification. For example, the application's program code can modify the bindings at run time. Thus, it is possible to modify the bindings generated by the design tool via application program code. A binding manager manages the bindings defined at design time or run time. Further, binding manager registers with program code (e.g., instances of object classes) that manages bound interface objects and underlying data (*i.e. a dataSource object*). When a change occurs to an interface object, its control notifies the binding manager. Similarly, when change occurs to a data item in a data source, its dataSource notifies the binding manager. In response to a change notification involving a data binding between an interface object and a data source's data item, the binding manager propagates the change between the interface object and the data source. Thus the binding manager processes the change request to ensure that bound interface objects and underlying data source objects remain synchronized (see *Abstract and the Summary*, also see *Fig. 2-3 and relevant discussion under the heading "Design-Time Binding" and "Run-Time Binding", columns 5-8*).

The above summary of the Goodisman reference clearly shows that the "binding concept" or the "data binding" aspect of the instant invention is part of existing knowledge in the art, as user interface objects and underlying data objects are said to be bound so that any change in any one of them can be communicated to the other in

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order to achieve synchronization. This is exactly what has been disclosed in the instant disclosure as the data binding concept and subsequently claimed.

The Examiner therefore concludes that it is the “data binding” aspect in conjunction with the known “peernet” or “Windows Peer-to-Peer Networking” technology that constitutes Applicant’s real invention. That is, synchronizing “data source objects” among multiple user nodes in the peer-to-peer network is **existing knowledge in the art** (at least not an invention that would not have been readily apparent or obvious to those skilled in the art according to Applicant’s own admission in the disclosure), so is synchronization between the “data sources” and corresponding “user interface objects” on each individual nodes or machines (e.g., Goodisman reference teaches “data binding” aspect of the invention). But, it is really the combination of the two aspects (e.g., the “peernet” aspect and the “data binding” aspect) together is what appears to be the Applicant’s real invention, and accordingly the Examiner considered whether there exists a motivation to use these two aspects together.

Motivation for the combination

In this section the Examiner will attempt to show and explain the motivation to combine the peer-to-peer aspect of the invention (e.g., teaching of IWP2P reference) with the data binding aspect of the invention (e.g., teaching of Goodisman reference) in order to arrive at the present invention. At the same time, the Examiner will also address Applicant’s allegation that there exists no reason to combine the references

and that Applicant's disclosure provided the reason to attempt to combine the cited references (see Remarks filed 08/13/2007).

First, Applicant pointed out that the Examiner admits that Goodisman does not teach the "peer-to-peer network, synchronization between user interfaces on a plurality of peer machines, or using peer graph". The Examiner agrees. The Applicant then said, *"The Examiner therefore relies on IWP2P, which provides an introduction to Windows Peer-to-Peer Networking, but with different functionality and that fails to disclose any interfaces" ([0029] in page 19).* The Examiner agrees with Applicant that IWP2P provides an introduction to Windows Peer-to-Peer Networking, but disagrees with Applicant's view that the IWP2P reference describes a Peer-to-Peer Network with "different functionality" and "fails to disclose any interfaces". As discussed in the "Detailed Analysis of the Application and Rationale/Response for the Rejections" section of this Office Action hereinabove, IWP2P reference teaches the functionality of synchronizing data sources among a plurality of nodes in a peer-to-peer network using peer graph, which is the same functionality as the peer-to-peer aspect of the instant invention. Furthermore, interfaces are implicitly taught in the reference as discussed in detail in that same section (see pages 15-16 hereinabove).

Applicant pointed out that on page 5 of the previous Office Action the Examiner stated that it would be obvious to combine the "data binding technique taught by Goodisman with the graphing technique of peer-to-peer networking taught by IWP2P in

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order to provide an improved and simplified mechanism for synchronizing user interface elements over a peer-to-peer network." Thus the Applicant argued saying, "*As this statement of obviousness is a direct quote of the last sentence of paragraph [0005] of the Specification, and a statement of the problem that the Applicant sought to solve, Applicant fails to see how the Examiner arrived at the reasons for obviousness without employing Applicant's disclosure.*" In response, the Examiner would like to point out that the Applicant appears to have misunderstood Examiner's above quoted statement to be the "motivation" behind the combination when the portion of the statement "*in order to provide an improved and simplified mechanism for synchronizing user interface elements over a peer-to-peer network*" was intended only to mean "*in order to arrive at the present invention*". As the Applicant noticed and mentioned, the portion of the statement is a direct quote from the specification, and a statement of the problem that the Applicant sought to solve, in other words the "gist" of the invention. Thus the Examiner used the direct quote to say that it would be obvious to combine the data binding technique taught by Goodisman with the graphing technique of peer-to-peer networking taught by IWP2P in order to arrive at the same invention. The actual motivation was then explicitly mentioned which is mentioned below for the convenience of the reader:

The motivation for the combination would have been to harness the various benefits of peer-to-peer networking for shared activities (Microsoft publication, pages 1-3) as well as to simplify the synchronization problem of user interface objects and the underlying data using "data binding" technique to avoid potential for error where an application programmer is required to write code to ensure such synchronization (Goodisman, Background of the invention, column 2 lines 4-9).

Applicant argued that the motivation given by the Examiner merely cites 3 pages of IWP2P and the problem that the Goodisman reference sought to solve, but the two are unrelated. Applicant further argued that the Examiner thus has not identified some evidence of a reason from the cited references themselves or from the knowledge of one of ordinary skill in the art that would have led one of ordinary skill in the art (hereinafter, "OOSA") to combine the disclosures of the cited references in the manner claimed. The Examiner respectfully disagrees with Applicant.

Recall, it appears that the invention basically has two major aspects, one is the "peer-to-peer" aspect and the other is the "data binding" aspect. In one embodiment, "peernet" is used for the "peer-to-peer" aspect for synchronizing "data source objects" among multiple user nodes in the peer-to-peer network, while the "data binding" aspect is performed on each individual nodes to synchronize the "data source objects" with corresponding user interface elements (see pages 16-17 of this Office Action for details). The Examiner believes that it is the "data binding" aspect in conjunction with the known "peernet" or "Windows Peer-to-Peer Networking" technology that constitutes Applicant's real invention. The "peer-to-peer" aspect of the invention is taught by IWP2P reference and the "data binding" aspect is taught by Goodisman. Therefore, to arrive at the present invention all that is required is to implement group interaction applications according to the teaching of Goodisman so that user interface elements are bound to corresponding underlying data sources, and then use such an application on a peer-to-

peer network, such as "Windows Peer-to-Peer Network" generally referred to as "peernet" taught by IWP2P, so that the group interaction application can benefit from using the "peer graph" to share data among a plurality of nodes in the group and thus mutually synchronize their respective data sources. A person of ordinary skill in the art would realize that by doing so, a user would naturally achieve mutually synchronized user interface objects on a plurality of machines on a peer-to-peer network. That is, OOSA can be motivated to implement a group interaction application according to the teaching of Goodisman for the same motivation taught by Goodisman, which is *"to simplify the synchronization problem of user interface objects and the underlying data using "data binding" technique to avoid potential for error where an application programmer is required to write code to ensure such synchronization (Goodisman, Background of the invention, column 2 lines 4-9)"*, as mentioned in the previous Office Action. At the same time, OOSA can be motivated to use a peer-to-peer network for sharing data using that group interaction application *"to harness the various benefits of peer-to-peer networking for shared activities"*, as mentioned in the previous Office action since IWP2P reference explicitly suggests using peer-to-peer network for real-time communication, collaboration and content distribution applications (see pages 1-3). In fact, as mentioned hereinabove, the Applicant admits, *"An increasingly popular use of peer-to-peer networks is for online group interaction"* ([0004]). Therefore, it can be expected that OOSA would naturally be motivated to use a peer-to-peer network such as the one described in IWP2P reference to share data using the group interaction application. Thus the invention would have been obvious when the references are used

together even though led by two separate motivations, which are different than Applicant's motivation for the invention.

Regarding IWP2P reference, the Applicant additionally argued that the reference "*does not disclose or imply synchronizing user interfaces*" (page 21). While the Examiner does not agree, the Examiner would like to point out that this particular feature of the reference was not relied upon in the rejections. The feature of the reference that was relied upon is synchronizing data source objects and not user interfaces. Applicant also argued, "*It also does not disclose or suggest changing a record's contents during an update, as recited in this claim, but instead requires that a record be replaces with a record containing a higher version number during an update*". The Examiner is not sure which claim the Applicant is referring to by "this claim". The Examiner was unable to find any claim that requires this limitation, in fact, no claim was found that contains the word "update". The Examiner requests that Applicant specifically identify the claim that has been referred to here so that the Examiner can properly address this argument.

Regarding claim 17, the Applicant further argued that the claim recites a "replicated data store" that "stores" objects from one computer onto another computer, and IWP2P does not disclose a replicated data store that stores objects from one computer onto another computer. Applicant pointed out, "*Rather, IWP2P discloses a 'replicated store' that is a set of records. Microsoft does not disclose that its 'replicated*

*store' includes peer graph objects or data source objects having the functionality claimed in the instant application" (see Remarks filed 8/13/07, [0026] in p18). In response, the Examiner would like to point out that the Applicant appears to be claiming the peer graph which is explicitly described in the IWP2P reference, **together with the** data source objects which are implicitly taught in the IWP2P reference but explicitly taught in Goodisman to constitute the replicated data store claimed. Thus the combination of Goodisman and IWP2P as explained hereinabove teaches the replicated data store claimed.*

Claim Objections

Claims 10-16 are directed to a computer-readable medium. Applicant has provided antecedent basis for the claim terminology "computer-readable medium". However, Applicant has not provided an explicit and deliberate (i.e., limiting) definition of the terminology. But, Applicant has provided intrinsic evidence of embodiments intended to be covered within the meaning. One of the covered embodiments include "transmission media" (see p9:6-8). Transmission media in the context of the disclosure can reasonably be interpreted to cover signals, carrier waves, electrical cable or optical fibers, which are currently considered by the Office to be non-statutory within the meaning of 101. Hence the claims have been objected to for encompassing within their scope non-statutory subject matter under the meaning of 35 U.S.C. 101.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,2,4-11,13-18,20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodisman (US 6,330,006 B1) in view of Microsoft Publication "Introduction to Windows Peer-to-Peer Networking" hereinafter IWP2P.

Claims 1,2,8-11,17,18, 20 and 21 are directed to synchronizing user interfaces on peer machines in a peer-to-peer network. In particular, data binding is used to ensure that data sources and corresponding user interface objects remain mutually synchronized in each peer machine. Peer-to-Peer networking, specifically peer graph technique is used to propagate data records between the networked computers to ensure data source objects remain mutually synchronized in all peer machines across the network. Thus the invention is directed in embodiments to an N to N replicated data store and presentation.

Goodisman teaches utilizing data binding technique for synchronizing interface display objects (204 controlled by object 304 in Fig. 3) with underlying data contained in

data source objects (308 in Fig. 3). He teaches how to bind an interface display object with an underlying data source object so that any change in any one of them can be communicated to the other in order to achieve synchronization (Summary of the Invention, also see Fig. 2-3 and relevant discussion under the heading "Design-Time Binding" and "Run-Time Binding in columns 5-8). However, Goodisman does not teach synchronizing user interfaces on a "plurality of peer machines" within a "peer-to-peer" network. He does not teach propagating data source objects between peers using peer graph in order to achieve synchronization. In short, Goodisman is missing some essential limitations, a "peer-to-peer" network and synchronization between the user interfaces on a plurality of peer machines on that network using peer graph.

However, IWP2P teaches using a Peer-to-Peer network that utilizes peer graph technique for synchronizing data between peer machines. It teaches that The Graphing component of a peer-to-peer network is responsible for maintaining a set of connected nodes known as a graph and providing flooding and replication of data across the graph. The Graphing component uses the Flood & Synchronization, Store, and Graph Maintenance subcomponents (page 6). It further teaches that a peer graph, or graph, is a set of nodes that are multiply connected to form a coupled network of nodes for the purposes of propagating data in the form of records or point-to-point data streams. A peer graph is built and based on flooding. Flooding is the process of propagating a record to all users connected to a graph. A flooding protocol is used to do the following:

Propagate the addition of new records to all the nodes of the graph.

Propagate the updates of changed records to all nodes of the graph.

Propagate the deletion of deleted records to all the nodes of the graph.

In addition, a synchronization process ensures that peers have the same set of records, which can result in the flooding of more records (page 13). It also teaches replicated store wherein the replicated store is the set of records associated with a graph that are securely published and synchronized between all the members of the group. The replicated store represents the view of the group data, which should be the same for all group members (page 21).

Therefore, it would have been obvious for a person of ordinary skill in the art at the time of the invention to combine the data binding technique taught by Goodisman with the graphing technique of peer-to-peer networking taught by IWP2P in order to provide an improved and simplified mechanism for synchronizing user interface elements over a peer-to-peer network. The motivation for the combination would have been to harness the various benefits of peer-to-peer networking for shared activities (IWP2P, pages 1-3) as well as to simplify the synchronization problem of user interface objects and the underlying data using "data binding" technique to avoid potential for error where an application programmer is required to write code to ensure such synchronization (Goodisman, Background of the invention, column 2 lines 4-9). Also refer to the **"Detailed Analysis of the Application and Rationale/Response for the Rejections"** section in the response to arguments section hereinabove in this Office Action for further explanation.

For claims 4 and 13, Goodisman further teaches binding the display object on the first machine to the data source object comprises subscribing by the display object to notification of a change in one or more properties of the data source object (column 7 line 66 to column 8 line 6).

For claims 5 and 14, Goodisman further teaches providing a notification interface (304 in Fig. 3) by the display object to receive notification of a change in one or more properties of the data source object, and wherein notifying the display object from the data source object that a change in the data source object has occurred comprises calling of the notification interface by the data source object (Fig. 3, column 7 lines 31 – column 8 lines 64)

For claims 6,7,15 and 16, IWP2P teaches using peer-to-peer network to allow users to engage in a group interaction session over the network sharing media items (Sharing Your Experience, page 2).

Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodisman (US 6,330,006 B1) in view of IWP2P and further in view of Reilly.

Claims 3 and 12 are directed to employing a model of object persistence for extracting data from received records to create an object from the data of the received

record. Neither Goodisman nor IWP2P explicitly mentions using a model of object persistence for this purpose. However, Reilly teaches object serialization, which uses a model of object persistence, to take an object's state and convert it to a stream of data for propagation so that the object can be restored at a later time, and even a later location. He teaches that with persistence, an object can be moved from one computer to another, and have it maintain its state (page 1). Therefore, it would have been obvious for a person of ordinary skill in the art at the time of the invention to combine the teachings of both Goodisman and IWP2P with that of Reilly in order to arrive at the instant invention. The motivation for employing a model of object persistence would have been to easily move an object from one computer to another having it maintain its state (Reilly, page 1).

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goodisman (US 6,330,006 B1) in view of IWP2P and further in view of Eriksson (PeerNet: Pushing Peer-to-Peer Down the Stack).

For claim 19, neither Goodisman nor IWP2P explicitly mentions that the peer-to-peer networking module implements the peernet protocol. However, Eriksson teaches peernet protocol for a peer-to-peer based network layer for large networks that implements a separation between address and identity in the context of a network protocol in order to avoid scalability issues. Therefore, it would have been obvious for a person of ordinary skill in the art at the time of the invention to combine the teachings of both Goodisman and IWP2P with that of Eriksson in order to arrive at the instant

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invention. The motivation for using a peernet protocol would have been to make the network layer: a) minimize the need for manual configuration, b) avoid centralized solutions and node specialization in favor of distributed and peer-to-peer solutions, and c) localize control overhead (Eriksson, page 1).

Conclusion


THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rashedul Hassan whose telephone number is 571-272-9481. The examiner can normally be reached on M-F 7:30AM - 4PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Weilun Lo can be reached on 571-272-4847. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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